

Inside Korea's IoT Market

Both the government and companies of all sizes are helping grow Korea's IoT industry, one of the most promising for investment

The rapid advancement of information technology (IT) has ushered in the Internet of Things (IoT) era in which people, processors, data and things are all connected through the internet. This means we have entered a hyper-connected society¹ where things are closely connected to each other, like in a spider web. IoT will not only increase productivity and efficiency by promoting creative innovation, but also create new convergence industries.

The IoT market will undoubtedly significantly grow in the near future. Studies from Machina Research and Stracorp show that the global market value will grow 21.7 percent on average a year, from USD 200 billion in 2013 to USD 1.2 trillion in 2022. By country, the IoT market of the United States and China will grow 20 percent and 17 percent, respectively, while that of Japan, Germany and Russia will record 11 percent, 9.6 percent and 8.8 percent annual growth, respectively.

Korea's IoT market is expected to post CAGR of 29 percent, with the market value rising from KRW 2.2827 trillion (USD 1.95 billion) in 2013 to KRW 22.82 trillion in 2022. Although Korea's share of the global IoT market stood at a mere 1 percent as of 2013, Korea's preparedness for IoT opportunities was well acknowledged in the 2013 G-20 IoT index,² published by the International Date Corporation (IDC). Thanks to its excellent ICT infrastructure, Korea ranked second, following the United States. And IoT promotion policies the government is pushing are expected to create tangible results in the near future.

Domestic IoT Market Status and Prospects

Classification		2013		2022	
		Global Market (USD bn)	Korean Market (KRW bn)	Global Market (USD bn)	Korean Market (KRW bn)
Devices	Chipsets	5.8	38.6	28.1	130.1
	Modules	10.2	58.8	47.7	361.7
	Terminals	172.8	2.1195 tn*	369.2	9.7281 tn*
	Subtotal	188.8	2.2169 tn*	445	10.2199 tn*
Networks	GSM/HSPA	3.1	0	6.9	0
	CDMA	4.2	11.5	7.8	24.6
	LTE	1.4	4.4	20.1	581.2
	Etc.	0.8	0.3	4.3	1.7
	Subtotal	9.5	16.2	39.1	607.5

¹ Hyper-connected society: A society where people, data and things are closely connected without any time and space constraints through an advanced network based on the internet and communications technologies.

² G-20 IoT index: Rankings on G20 countries' readiness to adopt IoT, published by the IDC based on 12 criteria: GDP, business environment, startup launching procedures, patent applications, population, energy usage, greenhouse gas emissions, number of broadband users, number of internet users, number of mobile phone users, security servers and IT-related spending.

Solution providers / System integrators	Device manufacturers	1.2	11.2	69.4	726.1
	System integrators	1.4	18.9	143.6	2,681.2 tn*
	Specific application service providers	0.8	2.3	90.4	957.1
	B2B/B2C service providers	0.3	1.1	52.1	84.9
Subtotal		3.7	33.5	355.5	4,449.3 tn*
Application / Services	Auto telematics	0.5	3.7	149.2	3,148.1 tn*
	Fleet management	0.1	1.1	18.6	141.7
	Smart grid and management	0.2	3.7	21.5	486.6
	Fixed wireless communication	0.1	0.2	27.1	120.6
	Home appliances	0.1	7.1	118.4	3,285.1 tn*
	Etc.	0.1	0.3	20.4	361.2
	Subtotal	1.1	1.1	355.2	7,494.3 tn*
Total (trillion)		0.2031	2.2827	1,194.8	22.82

Source: Machina Research, Stracorp (2013)
* Units are trillion, not trillion billion.

With market prospects bright, major countries including the United States, China and Japan are actively engaged in efforts to promote IoT as a core industry. In 2008, the U.S. government selected IoT as one of the six major disruptive technologies that can affect national competitiveness until 2025 and established a technology roadmap. The government is now focused on establishing hyper-connected infrastructure to expand the communication network to the IoT network.

In Europe, the European Union established an action plan in 2009 to promote the IoT industry. The UK announced an investment plan worth GBP 45 million in 2014 and Germany unveiled Industrie 4.0, a project that aims to increase productivity by 30 percent through IoT utilization.

Asian countries are also working to boost the IoT industry. China established the Sensor Network Information Center in 2009 and Machine-to-Machine Center in 2010. The country currently promotes various IoT policies, including the 12-5 Plan for the Development of Internet of Things. Japan has promoted IoT-related policies since the early 2000s. Through ICT growth strategy meetings, the country's Ministry of Internal Affairs and Communications established new growth strategies that include the use of smart towns, smart grids and remote monitoring.

In line with global trends, the Korean government designated the IoT industry as one of the new core internet-related industries in its plan to promote new internet-related industries in 2013. The following year, the government announced the Basic IoT Promotion Plan, a comprehensive development strategy that will help the nation become a leader in the hyper-connected raise digital revolution. Co-established by the Ministry of Science, ICT and Future Planning and related ministries, the Basic Plan aims to increase the domestic market size to KRW 30 trillion, raise the number of export companies to 350 and create 30,000 new jobs through increasing productivity by more than 30 percent.

Many companies at home and abroad have entered the global IoT market, supported by IoT promotion policies from their countries. In Korea, local IT companies and telecommunications operators have played a leading role in promoting the growth of the industry since 2014.

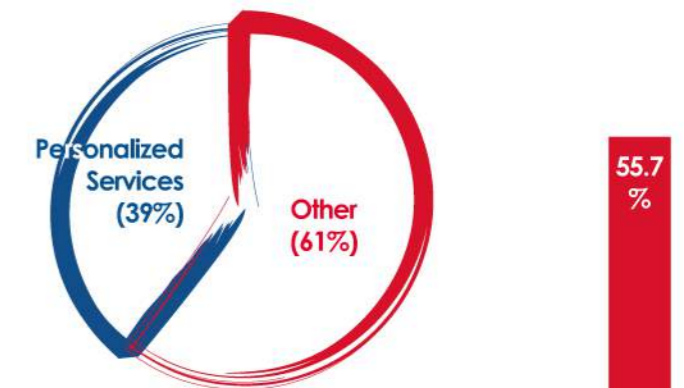
Local conglomerates have joined the global competition to preoccupy the standardized IoT platform market, using a core competitiveness gained from their respective fields, including electronics and network. For example, Samsung Electronics has become a competitive smart home device provider through building on its strong manufacturing competitiveness. To preoccupy the standardized IoT platform market, the company has been making various efforts. It has launched ARTIK,³ a Samsung-developed IoT platform, acquired the IoT platform developer SmartThings, actively participated in global standardization consortiums and more. Korea's telecommunications giant, SK Telecom, also focuses on network platform development through using its network technologies and infrastructure. Since the launch of the Legacy M2M platform in 2008, the company has been engaged in efforts to develop an IoT platform and has recently developed an integrated IoT platform called ThingPlug.⁴

Local small- and medium-sized enterprises (SMEs) are competing in both domestic and global markets using their creative ideas and services. Local IoT platform developer Daliworks developed an IoT cloud platform called Thing+, which enables customized IoT services through various B2B gateways, devices and sensors. The platform is currently used for the management of agricultural produce in Korea as well as for frozen and refrigerated food monitoring in Brazil. Building on their creative ideas and relatively faster decision-making process compared to their larger counterparts, local SMEs are launching various IoT products and services.

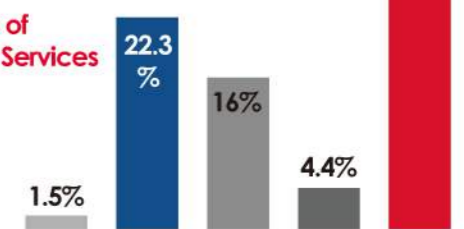
As many are optimistic about the growth of the IoT industry, the question is now which sector of the local IoT industry will be most promising. The 2014 IoT Survey, co-conducted by the Ministry of Science, ICT and Future Planning and the Korea IoT Association, shows that the personalized IoT service sector, such as smart home and health care services, will grow most rapidly.

The personalized IoT service sector accounted for the largest share of the total sales in Korea's IoT-applied service market in 2014, at 39.2 percent, and is expected to continue having the largest share in 2015, with 35.1 percent. Smart home services and health care services are the major segments of the personalized IoT service sector, accounting for 55.7 percent and 22.4 percent of the market share, respectively. Those segments are expected to grow even stronger, supported by government policies. The government secured funds for the development of what's called the Smart City Test Complex (KRW 5.1 billion) and the Health Care Test Complex (KRW 7.5 billion) to support the commercialization of IoT services.

Sales Ratio of IoT-Applied Services



Major Segments of Personalized IoT Services



In the long term, IoT technologies are expected to be applied in various sectors, including public safety and security, transportation, buildings and bridges. As the IoT industry will further expand into the personalized service and public sectors, it is undoubtedly one of the most promising target industries for investment. In order to nurture the IoT industry, the Korean government should continue to explore new service models. Most importantly, the government should focus on developing core technologies and services to boost technological competitiveness and thus lead the global IoT market.

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³ ARTIK: A Samsung-developed, open IoT platform that integrates various functions, including software, driver, storage, security solution, development board and cloud.

⁴ ThingPlug: An open platform compatible with devices and applications that comply with oneM2M, global IoT standards. The research results of a government project (MobiBus) with the Korea Electronics Technology Institute partly contributed to the development of the platform.